Notebook Series -- Notebooks by Edison
Notebook, N-13-08-05

This notebook was used by Edison during the period August-October 1913. The entries pertain to the transfer and molding processes involved in disc record manufacture. At the beginning of the book are notes on experiments with varnishes and other resinous compounds for coating record blanks and receiving impressions. The middle of the book contains notes on experiments involving the preparation, molding, and composition of record blanks. The last half of the book contains a summary of "Results of many Expts last week" involving experimental transfers made with various record blanks. Notes on these experiments are continued in N-13-10-31. Edison's notes indicate that employees Peter C. Christensen, Charles Dally, Archie D. Hoffman, and Frederick P. Ott assisted him in some instances. Inserted into the book are two loose items, including a memorandum from Ludwig (Louis) Ott to Edison regarding a supply of a phosphorous compound. The front cover is labeled "Disc Records 1913." The pages are unnumbered. Approximately 110 pages have been used.

Aug 5th 1913

Expts on Varnish for disc transfers

No 1

Reg Phenol resin + 6/4 (15% Extra from Reg) Already

26.6 grams Varnish — oxalated
1.333 grms Trichlorophenol .666 milg
Dr Hain Paraphenylenediamine, +
250 milg Ferric Chl anhyd —
Turns black on disc — Glass 1½
above hot plate, on 1140 min —
Set 1152 12 minutes,
4 pl also 2 no bubbles, 1 2 or 3 small 1
several of 1/16 dia — Very dark on plate
opaque —

Comes off easy — attach
brass plate,
Brittle

No 2

26.6 Reg V 6/4 15% Extra like No 1
1 333 Trichlorophenol.
666 Dethacu Para.
250 — Cupric Chloride —
on 1155 am. — Turns blue dont
seem as if $CuCl_2$ dissolves
Set 12.16 — 21 minutes —
after set little darker than 1 —
dont swell so much few very
small bubbles on both more
shiny surface than No 1 —
No 1 is matte, No 2 is japan shear
no sign matte —

Comes off easy
Attaches plate — not very
Brittle, dedint puff away
from plate

No 3

26.6
1.33 Trichloroethylene
.666 Methane Pan
250 Mlg Permanganate '12
Temp at 65°C [illegible]
to [illegible] —
On. 1204½ – Noon – set 1224 –
Lots bubbles all over —
up to No 4 No [illegible] limit
bubbles —

full bubbles – stuck to
plate Good – dark Red —

No 4

26.6
1.33 Trichlorphenol
666 Ethrea
250 Chl Tri —
Dont blacken keeps almost same
Color but opac as of Tri Chl
dedent decreases —
on 1220 qui — 1234 set.
after set lots bubbles all over
cloth plates — Red & transparent,

Romechart Gritle
Comes off fairly easy
full bubbles — Red

Duplicate — Except Reg Varnish
Penlac + Pum

2 poured + dried in air

2 poured on plates on

glass 1 ¼ high —

ZnCl hard developed it cold
20 min not clear —

5

26.6
1.333 Trichlorphenol
.666 Dilution
250 CCl Zn

Hard developer Zinc gets muddy.
I left bulb on steam plate for 1½ hr.
Alcohol boiled then it
turned clear red seed color
on 1238, set 1250. 12 minutes
Red + transparent
Considerable number bubbles
which appear after set
there is true of most of
them, NO I don't in this
respect no surface as mentioned

This varnish ~~not~~ set in bubbles
in less than 1 hour

All the bubbles are round 1/16 diam
what burst them —

Comes off easy — alcohols
plate. Not brittle —

6-

26.6
1.33. Trichlorphenol
666 Ethanol Fare
250 Oxalic acid
on 1249 $\frac{1}{2}$ =
Oxalic dont dissolves dont
seem to have any action —
Set 109- 19 minutes —
transparent red -
Lots bubbles come when it
gets -

Comes off rather easy
all acids brass Red full
Cracks & bubbles

No 7

26.6
1.333 Trichloroethylene
666 Dextrin Powder
250 Chl Calcium fused

On 5,01, Set 521 Red

Very matte trip - scarcely attractive
brass. Comes off perfect no
bubbles - soft low temperature

This looks good if
not affected by water

Was on 1" glass plate above
hot plate cell night before
putting right on hot plate

True of 7 8 9 10 11 + 12
Dont seem to be affected
by water -

108

26.6
1.333 Trichlorophenol
666 De Haen Phenol
250 Cerous Chloride

On 502. Set 525

broke bottle —

Seriously attacks brass plate
Comes off perfect very transparent
red only 2 bubbles —
fairly soft low temp —

No 9

26.6
1,373, Inclusions phenol
660 Delta-en Prima

250 mg PbO_2 —

On 504 Set 525

Transparent red corner off
pleasant little hand one pleasant
not very soft low lump
attached plated very little
full [illegible] —
no [illegible] — Not varnished
[illegible] [illegible] —
Not [illegible]

No 10.

26.6
1,333, Trichlorophenol
666 Dettaw Para
270 phenol phosphate

On 505 - Set 525

Transparent red - Comm. 66
plate perfect scarcely any
attack on plate, not very
soft low temp -
Very few bubbles

JS011

26.6
1.333 Trichlorphenol
666 Dettaccin Pura
250. Negative Chl Aluminum

Phenomenon No soap bubbles or bubbles in liquid on shaking bottle & surface tension must be very different from the cation

Looks like Cat Rheum — for a Cone precipitate — this would make it less viscous & less bubbles on 4.58 - set 520

Attacks plate some — only few bubbles — Corners of plate gray not very soft low tearing — Red —

No 12

26.6
1.373, Trichlorophenol
666 - Yellow Powder

1.000, ZnCl, 1

Precipitate Opalescent
Clay like - Strong

On 5 pm — dilute kept -

Considerable Gelatin —
attack plate a little,
Very soft low temp - Re)

N013
2616
1.533 Trichoplacinae
666 Dellasia Prema

676 Varnish 4% Paranchloroanilin only — gave very bad % on transfer, but perfect on print, Dimroddie finds this has twice the Contraction as 521, it evidently Cooks in press & contracted very much but after transfer it has very small contraction & hence gives high % on printing —

Evidently our Oven cooking showed 6 & baked nits to a cap so much press contraction,

No 14

2616
1.333. Trichlorophenol C
666. Erythrosin Prima
3 gram phenol Rosin
on — 335 — Set 405 —

Strong No bubbles, not very soft at low — Red' dark —

Some doubt about it being 3 or 1 gram Rosin —

Attacks grows a little —

Commercial Tinting

15 -

26.6

1.333 Trichlphenol

666 DEH para

5 grams phenol Resin

on 3.36 — at 3.57 21 min

Concentrate Pump — Red, faulty

raft — only 2 or 3 since CC

blockage —

16 -

2616
1,333, Trichlorethanol
666 Dett plain
1 gram Phenol Red
on 337 at 3 56 19min

Comes -66 very sleepy but
attack brew plate, Handy
left low temp ~~[illegible]~~.
Must be wrong amount
Phenol Red! - Red light -

17 26.6
1.333. Trichlorophenol
.666 DEH para

10 grms phenol Reason
not necessary

on 337 set 357 20 min

Commenced very easily
deep garnet 12 or 13 bubbles
very heat at low temp
hardly affected every the green
plate. —

18

26.6
1.333 Trichlorphenol
666 Dett prem

4 grms Cresol Resin

Comes of only fairly strong
Reversal [illegible] that
left at very low [illegible]

19 26.6
1.333 Trichlorophenol
666 Dett prem
250 mlg Black Oxide Copper

on 3.53 — set 4.15

Cover off Evap - left at low

Mother bottom reinforced -
not pouring 15 or 20 [illegible]

20.

26.6

1.333 Trichlorophenol

666 – DETT fana

250 Milg Picric acid

Burated Gattle –

full bubbles – too [illegible]

hot [illegible] [illegible]

time of 20 to 25 –

Gurnet [illegible] [illegible]

[illegible] plate [illegible] it –

No [illegible] –

21 -

Reg as 20

with 250 mlg

Hydrosulfite —

Dried on plate all night

in air

Comes off pretty easy

Very soft at first: dirty

from Hydrosulfite fuss but

may be preferable —

garnet.

22

Reg serum 1:20

250 mlg Ferricy K

Dried in air all night

Very Easy 1:66 Dout attach
plate, float, soft at low
Red — Promising

23

500 mlg Ferric Chl

Dried in air all night

Opaque black alkaline plate, million crystals of lead, only few nodules

too much iron —

Dropped bottle in 23 & 24 at 10 am & came thru hung

Evidently Fe_2Cl_2 Concentr

24 –

1 gram Tannic Acid

Dried in air all night,

Bad – Cannot [illegible]

attempt plating –

not permanent

25. –

250 cc General Acetic

Dried over nitr weight

Commercial Essay only collection
plate little – railway [illegible] –
light red – don't think
its promising –

Comes off plate good
Nickel plate, 5 minutes
plate same
Very soft at low
temp

26 —

Acid penta part of penta
from dried/decomposition solution
which forms a salt with
ammonia which is
used in ammonia leaf
platinum coating — principally
by HCl, washed & dried —

26.66 Reg Vanadate
15% Extra 6/4

1.333 acid penta
66.66 DEH as in Para

5 at 11th 5 pm put on plate
in and —
Sunday pm neither plate or
kettle fired — put on & came
1½ up found at 9 am Monday
Set, ~~on~~ practically no bubbles
Lowered glass to ½" at 9 am

omits nickel plate bad
from this I should
say acid pentia is
what is wanted —

27 —

Same as 26 but
1,333 Jar part of
alcoholic pentia —

11th Saturday put on 4
plates in air to dry
5 pm

Sunday pm neither the plates or
bottle had fired — placed on
glass same as 26 —
There are considerable bubbles
on — besides the froth that
was on originally

Extra soft when hot, but quickly
becomes brittle at much higher
temp than 26 — its awful brittle

All veneers are attacked by KOH, forming innumerable rounded holes, these swell up - as if there was segregation in veneer such in oak & Eaton effect particularly there is the same effect. The second parts seems not as condensed as the other as plates which not been further condensed in transferring give many more holes than after condensing

Noticed that stripped film from plate do not have holes in top of veneer where air gets to it but only the bottom in contact with plate which is good for us as there is top air transfer

I notice that two veneers one rig with Pentamount & one with Petta Tour after

strong condensation by laying dried on steam plate with glass covering thus leaving held for 1 hour — that the Penta-acid plate is not affected in 20 min by Roth whereas Ter is very considerable affected

Took one of Dallys 2 hour plates which has been tried transferred & printed & stand's wear well — This plate put on hot plate 4 hours. The parts that puffed up & decided out the big continuous heat is strongly attacked by Roth, but the other part which stuck to plate was not attacked during time it was in Roth — Cu2 —

28 – Trioxymethylene
8% taking place of
6/4 = put a guessed
quantity Pentoxide
in – 6 pm Tuesday
3 plates

28 1/2

all night 1/2" above hot plate on
glass not covered – put it
night on hot plate 1/2 hour just
got rubbery wouldn't go
further put in 300 mlg
H_2CO_3 to 3/4" of Vanadium –
Lampblack – Vanadium turns
Black

Dont get rubbery on
glass whereas 29 &
30 gets Rubbery

There is something
within —

Note 29 Condensed
overnight in bottle
30 Did not condense

29 = Vial with Trioxymethylene
666 mg DEthanol Para
gave nitrogen in lower than I have
value at dinner

This shows that
without Para - ~~[illegible]~~
Trioxy does condense at
low pH values by
~~[illegible]~~ probably
Condensing with Para
like formaldehyde does
with ammonia

good point —

Some 1/4 @ 1/16 bubbles —

All night hot plate - big bubbles
Eventually left hot VERY
hard cold

Bubbles got rid of this
Vermouth w/ CO2 & Extraordinarily
soft solution —

Dilute Condensate in
Calcium carbonate
Volume No 29
Condensed

30. Vermouth with Triosymethylene
.666 Deltacin —
~~[illegible]~~ 666 — Pentacacid —

Gave nutty un like
than I have detected at
dinner —

on a Cover plate, some 1/8 @ 1/16
bubbles —
next morning we might ~~[illegible]~~ that that's
decent. Very soft but ~~[illegible]~~ not fine
Think there's a good point — can't scrach it.

I find that Formaldehyde
poured in solution
(paraphenylhydrazine)
Condensates at Cold
to unfavorable product
S S
not sol alcohol

This is no good when pressed with Edger free - it squashes all out

No 2 having some fabric - only squashes out 1/16 more in diameter & is OK - by using a little more fabric it would squash out very little

Oct 19 1913

Experiments to make powder blanks with a smooth surface

No 1

1st one made in little round screw press -

Cresol Resin	20 grms
Chalk	100 "
Alcohol	30 cc

Moulds perfect 3/8 thick tried ATC could break it

We dried the alcohol out & powdered it up again - Cute rather hard

This is 4 to 1 - weighs 35½ grams 2¼ X 10/32 thick

A Reg disc would weigh 700 grams - 512 grms of 1/4 inch thick -

Our presses are more than Hoffman & little more than in transfer

Squeezes out 1/16 more disc but is unbalanced & good. This is equal to 1/4 more disc than 10" disc, 50% fibre would probably make it about same as reg powder blank surface except where slack to mould is as shiny smooth as a transfer - There is something in this

Oct 19

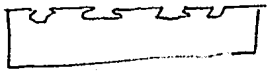
X02

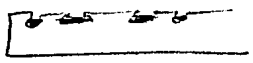
25 gram wood pulp
100 Chalk
30 Cresol Resin
60 cc Alcohol
10 China Clay -

25 grams 7/32 thick -

one place Resin segregated - + fine surface like a transfer the other part good surface but shows same surface as reg powder blank but in a minutiae way -
Evidently springy fibre is not good,
part where resin segregated can remarkably be cut with knife very hard, Fred could not break it
Think Alcohol was not all dried out,
Disc would weigh 480 grms

Rubbing Chalk containing Cresol Resin on surface of a powder blank only impregnates surface a little. The chalk is always below the general surface





Emery paper wears off fabric bring it level with chalk but it is still a bad surface though large holes disappear

Put some film made of colheat & Cow dung on quick powder blank it squeezed down good but still stuck to mould apparently it allowed black fibre to flow as it hilly but holes closed possibly should use graphite mixed chalk

So powder will flow -

Grafite in pores of surface
mg - because in the premium
blank it compresses as a
whole the top dont flow at
all - it wants some
trick whereby the surface
flows - The following

find that 75% blank
powder with Crucal
Resin in - Mag Co
mixed with 25% Talcum
powder & gives more
even flow & better
surface - Very strong
fred OCC Cant break
2 1/2 by 7/32 thick -

Oct 22 1917

Expts flowing Reg Var on glass plates dried to make a very thin film pouring Var on level glass, dried air all night then in 4 hours heat up from 120 gradually to 212 & kept 212 for 2 hours - These 3 st Coming off Easy so there will be no difficulty in pulling off hot & possibly chilling off by Conduction -

Sesame oil is the

best Lanolin next &

Oil Benne next.
Comes off pretty good without anything - probably on very hard
The albolene - Cylinder oil -
Vaseline Cod liver oil -
Caramelle - which was only
one that absolutely wouldn't
Come off at all

Oil Cade - were pretty
hard to pull off -
could just scratch surface
not as quickly condemned as Reg

Think plain glass will do the
trick, with ring hard on - perhaps
Sesame oil ring to stop leak -
after our dry ring can be removed
if necessary - Can take off by
starting Edge & perhaps by chilling

Oct 24 1913

I find that wood fibre blank with gilsonite dissolved & Toluol makes blank you can ~~go~~ flow Reg Von over & hardens in oven without it scaling ~~on~~ more than that due to unquenchen expansion also find reg wood fibre without any binder but natural resin it has can be flowed & baked or Rosin pressed thereon —

Am working blanks of other things + starch — ng —

Brown
Received a Specimen —

Hardened a flowed blank 3 hours from 120 up 210 — The one having gilsonite in 15 To 100 fibre gave bubbly surface but, the fibre without anything made hat gave only few bubbles when

Oct 24 1917

put in oven fresh & the one dried 3 hours allowed before putting in gave no bubbles

From this we can use wood fibre, moulded with edge raised to prevent varnish running over edges. Dry in air 3 or 4 hours & then put in oven bake, & transfer each blank being 1/2 thickness & when pressing put together & pressed each side

It will be best to press the blanks before pressing with greater pressure then they afterwards get & probably cracking before flowing —

The one that after cracking 3 hours before putting in oven & had no bubbles is 40/1000 thick — it pulls surface of blank off with it

Oct 24 1913

The Varnish doesn't seem to penetrate more than 1/1000, where there are deep holes in face it goes in

On polishing veneer we took to mount the blank too frosted a surface to detach it, probably veneer too green not hardened enough — probably we will have to use a little resin varnish on other surface of plain wood blank to make a less frosted surface to help strip veneer surface from mount —

We found by superposing a Reg blank with paper on it transfer on it then removing the veneer & grinding the surface off that that when we make a new transfer it prints the surfaces are fine + OK we can use a removable blank veneer many times & it will stand heat of press - it may

Oct 24 1913

plastic. makes surface of blank egg shell but this we grind off to the egg shell coat and then get a very smooth surface on Record. The trouble we have there has resulted with the Blank & not in Veneer or Record would be going to be a job to carry this out commercially —

Experiments with Bases.
from Induline Dyes in
place of paraphenylenediamine

#031 –

Rhano Brown ET –

32 – phosphine 11 mds. Sal OK
Rubbery – no Eggballs, black
only one up to 40 that is free of
~~Eggballs~~ after 1st Condensation
Note – This is a fine Black Dye
for Condensita, 20/1000 opaque
& very little does the trick –

33 – Marking Yellow Y –
good – Red – Easy off plate
no amnt – dedut swell up
no bubbles –
Very tough – Promising

32 = May do ~~for~~ to Replace
Penta or Para
Important for Dye = BLACK
any way –
After strong final Condensation
shining its transparent by
transmitted light, Very deep
Red black by reflected
Light

34 Croc Scarlet, M.O.O.
ng

35 Bro Brown 2 RX –
Red like Reg – scarcely any bubbles
good – Comes off Gravy – might
do without Paula or Paris –

36 = Auramine O O B Cone Seq
went McGay at 4 pm
on glass at 1154 – next Kept for
bubbles To 80 32 – Red like Reg
not brittle, bubbly –

37 – Rhemo Brocon A T Cone
went McGay 4 pm –
put on glass 11 54
Hard get off plate, Red, not
blackenough for Dyz –
Very bubbly –

38 Napthal Blue M S
This is as black as I dye for Condensite as 32 but it buffs up very bad —

39 — Chrysoidine R. very Sol. Rubbered at 405 pm 4 hour Red. Easy off plate — Lovely

40 Green M —
Rubbered at 405 pm 4 hour Bottle — Dye not soluble enough.

Most of the preceeding are not very good in the Varnish — Large Specimens —

31-32-33-34 & 35 set rubbering at 230 on plane 1½" high on 1154 —

Oct 28 1913

Comparison of properties of Phenol Resin & Cresol resin under heat

		82 Phenol	Cresol 24P 217
1	Soft Like Molasses	210	217
2	Evenly melted like Molasses	220	225
3	Melted like table syrup	270	
4	Start Evolution of gas	275	230
5	Rapid " "	355	260
6	Nearly clear of gas	385	360
7	Clear	390 400	370
8	gets cloudy	420	
9	Skins forms mixture phenol	440	500
10	Evolution gas starts again	460	530
11	Quite a little foaming	500	550
12	Foams very much	520	550
13	Max Temp reached	560	560

Note very little if any skin forms on Cresol. The 2nd Evolution gas in Cresol is very much less than with phenol

26.6 Req V 6/4 without Paula or Para

10% Hexachloroethane —
Dissolves ok clear
Comes off fine no bubbles
pretty strong —
This should work good
Req with Paula or Para —

20% Hexachloroethane
Crystalizes out in drying
on plate — Clears up some
on glass 1" — Brittle Nothing
peculiar after dried hardness
(bubbles) —

50% Hexa dont quite all
dissolve, Crystalizes out
till opaque —
Clears up on glass 1"
NG — Crysl out
on condensing

after fully Condensed clear
very strong, can cut spiral
chips — bends quite fast lamp

Think This is some for
Regular — its very hard
not brittle no bubbles —

Very stiff

Note Hoffman
Make some
Varnish —

Note 50% of proper unaffected material Can be
put with Varnish
Coulanny Reg 6/4
& Condense + act like
Reg Condensate —

1.6.6

1.333 Tetrachloronaphthalene
Only 90% devolved —
got to set it on a Glass 1" high to
keep it from Crystallizing out
in liquid —
Clears up on Glass 1" from bottom
few bubbles — fungy condensed
hard — Tough not brittle
Comes off okay

2.666 - Dettam Paranaphthaleneglycolesterin

5.332 Dett Para — flex + rubbery
hot — Brittle when cold —

This shows that 1/2 + 1/2
of a proper material will
make a Condensate + probably
less flowing or Rubbery cold

This can be used if necessary

Oct 29 1973

finely ground charcoal makes a good blank 2½" but it will not stand squeeze crumbles at edges 100 charcoal 35 Crystal Resin —

Will try Reg plate Vacuum use of Condensate will prevent crumbling of Edges

Tried wetting fibre with thin coat Resinate of Na (Resin) — then dry — then soak in CaCl Calcium to make Ca Resinate then wash + dry — this is good blank — dont squeeze out at all transfer blanks OR —

Oct 29 1913

We find that the powder blank is very much improved by using 5% 6/4 in Resin to fire it. It stops sticking to mould in making blanks goes very perfect & even faces & it probably flows the surfaces often running. These req are very good, but RO are clean.

The RO we find are due to too low temp in baking ~~blank~~ briquettes ~~225~~ 225 — These RO only run these in 5½ hours & get up to ~~260~~ 260, only had 2 runs in 20 — on Reg blanks req proceeds —

Oct 29 1913

Chrisdamen heated
10 Records (Double Transfers)
up to 120 Fahr 1½ hours
OK — then took same records
Put 10 in chamber with
solid CO_2 & brought
them down to 42
deg Fahr Below Zero
for 2 hours — The
taken out & brought
right out into Lab at
80° deg Fahr each
were OK except one which
was Cracked from hole to
Edge, both, the weld is
perfect. It only gave
a slight snap on playing
the Cracked Blank, it would

Oct 29 1913

be noticed if music was on —

The surfaces when covered with frost was good —

There was a number of places showing yellow in original record —

These cracked around outer Edge,

This is of no significance as we seldom ever have them —

Therefore Double Transfer is OK + the coated GE between the two ~~one~~ is perfect —

+ we can use them whenever

Oct 29 1973

Fred Ott Run a large face of Varnish plates up to 300 by 1/2 hour. 50 deg rise last hour 25 deg hour — These plates had already been baked Reg up to 225 — 8 out of 10 were OK 2 lifted after transferring + priming NO Rout

Made another with baked plates

started	650 —	
	745	200 deg
30	815	225
30	845	250
30	915	275
30	945	300
45	1030	325
45	1115	350
45	1200	350

No ammonia Comes off

Afterwards found some ammonia in box which probably came out of pores on cooling 8 out of

Oct 29 1913

10 of these were free of the plate & some lifted — all could be healed & flattened — They were so highly condensed that the full heat of the hot plate scarcely softened them enough to bend. They may not be soft enough to print at 100 lbs steam pressure —

Want probably 280 instead of the usual 225 & then will not be enough glue formed internally as usual when transferred at 320° Fahr to make them rough

Dollys run at 260 - were almost free of Run & cracks, 18 out of 20 were OK —

We weighed the veneers & found

	1	21.7 gram	6	19.9
	2	18.6	7	18.0
Thickness	3	17.5	8	15.3
Condition in	4	19.7		
dry room	5	16.9		

The Calliper of the 8 sheets

1 —	13	To	20/1000	inch from edge
2	12	"	16	
3	12	"	16	
4	14	"	17	
5	13	"	15	
6	13		16	
7	10		16	
8	11		14	

100% Variation

Fred ~~OCC~~ Running Transfer plates
that has been run in oven at
225 — Been in preliminary
furnace —

1	Hour	200
1/2	"	225
1	"	250
2	"	275
1	" hold	275 — Slight tree [illegible]

Cracked [illegible]

80% Cracked, some lifted
2 only OK —

There is a change in view of [illegible]
that ~~OCC~~ 28th Lot run at 300
80% OK. —

Dolley funds some conclusions
Here 1st run 1650 plates, 6 hours
run to 260 — 91% OK. Gal lifted

Next run — 275 — 1 hour longer
50% lifted —

Must be that preliminary stage after flowing has something to do with this —

Dalley is now making a run with short drying after flowing & long drying & running both together in same furnace!

Don't think Hexachlorethane is any good - Volatilizes with steam from boiling water

Can't say if it combines with Aluminum or not don't think it does —

Reg Varnish Venice

225 Fahr Bake — Lot 1531 —

Var 632 —

With 214 gm wet on 1/2" wide - 2 1/2 long

48° Fahr to 100°	.0100	Expansion
100 " to 140	.0180	
140 " to 160	.0520	

With 428 gm wet

48 to 100°	.0100
100 to 140	.0175
140 to 160	.1265 —

I find that Penta acid pure
combined with NH4 is very
volatile sublimes at 200 Bad

Also that acid itself does
same thing.

I was mistaken about
the being stable —

Charcoal Blank

25 phenol resin
45 alcohol
45 charcoal
5% 6/4 —

There was
debut abundance
gave no RO +
good surface
but cracked
Edge

No 3 Fred Ott

Fred Ott & McClennan
furnace in Box with
Thin Cage of transfer
plates 10 plates

Nine OK 1 left 1" dia
probably might prevent —
These plates had already
been thru the oven to 225°

Schedule

1/2 get to 200
1/2 " 225
1 " 250
1 " 275 —

Immediately cool in
box.

X

Results of many Expts Last week

213 Blanket. Dalley 275° Veneers Reg Schedule
Printed Reg 12 transfer
Transfer Efficiency OK 9 -
Cancel 1
Discards 2 Chipped Edge

Printed 6 -
All ok -

Good Surface	2	Run Outs	7
Loud "	8	No runouts	2
Very Loud	1	faint	1
fair	1	Bad RO	1
	12	Double RO	1
			12

Surfaces Bad —

Run Outs Bad

723 Blanks Reg Var plates 632 Var

12 transfers free release 10
sticks 2

OK 6
Comel 3
No 3 1 cracked.
2 Rubbed

Prints 6 all ok

good surfaces	5	Run out	5
Very good "	1	No Run out	3
fair "	3	faint	1
Load	3	Very faint	1
	12	Beg RO	2
			12

Surfaces
Not good

Run outs
Bad

723 Blanks –

Plates by Dalley baked 275.7.
Reg schedule 12 Transf
Free release 9
Stuck 3
Transfers OK 9
Cancel 1
Discard 2
12

Prints 6 –
5 OK
1 poor print

Loud	surfaces	5	No RO	7
fair	"	4	furnt	3
good	"	3	RO	2
		12		12

Surfaces
Bad

Run outs
fair –

723 Epic Blank

Dallys plates 275" 7
Reg schedule — free release 11
Stick 1
12

Transfers OK 9
Cornd 1
Discards 2
12

Prints -
2 OK
3 poor prints
1 Cracked + Discard

Loud Surfaces	2	No Run Out	2
fair "	2	Run Out	4
good "	4	faint	1
fair to good	3	Very faint	4
Very good	1	Dirtied RO	1
	12		12

Surfaces not good

Run out not good

722 Varnish Req Blanks Req schedule
6 Transfers 4 OK - 2 descards

Prints 4 OK -

Loud.	7	RO	2
fair	5	faint	3
good	0	No RO	6
	11	Double RO	1
			12

Surfaces
Bad

Run Cards
not good

719 Blanks Dacly plates baked
275° - Req schedule
12 Transfers Free release 5
Stuck 7

Transfers OK 10
Discarded 2 chipped Edge

Prints - 6 OR —

very good	2	RO	2
good	5	Bad RO	1
fair	4	No RO	3
Lowd		faint	3
faint to good	1	very faint	2
	12		12

Surfaces fair

Run Outs fair

719 Blanks Dally 275° plates
Reg Schedule 80 lbs steam
printed also with 80 lbs steam
12 Transfers free solvents 3
Stick 9
OK 6 Discards 6 –

Printing: 6, all OK –

V good	2	Run Cuts
good	6	Bad RO 1
fair	3	faint 1
fair to good	1	No RO 9
	12	Very faint 1

Surfaces: good

Run Cuts good

707 Blank 632 Van Lot 1526

6 Transfers stuck 2
free release 4

6 all ok

Printing 6 acc ok

Load	3	RO	9
fair	7	Big RO	2
good	2	faint no RO	1
	12		12

Surfaces Bad

Rien Qiels Very Bad

418 Blank Baked 280
632 Van 60 lbs steam
Req schedule -
6 stuck to place
no free release -
OK 4
Discards 2

Prints OK 4
Printed 60 lbs -

Load	2	RO	1
good	1	NO RO	3
fair	3	Big RO	1
fair to good	2	fair	3
	8		8

Surfaces
Not good

Run out.
fair

718 Blank Baked 280°.

632 V Req schedule –
all free scale
OK 3
Discards 3

Print. Req schedule
OK 3
Discards 3

Very good	1	RO	2
good	5	Very Bad RO	2
fair	6	faint	5
	12	very faint	2
		NO RO	1
			12

Surfaces not good

Run Cards not good

Blanks baked 350 F.
6 transfers Reg [illegible]
4 OK 2 chipped edges -

Print 3 OK 2 Dus 1 poor print.

Loud	5	No RO	1
fair	1	RO	4
Moderate	1	Bad RO	1
good	1	faint	2
	8		8

Surfaces		Run Jacks	
Bad	1	Bad	

12 Blanks - 213
632 Van Lot 1529

Brat blanks alone up in press in
Contact for 20 minutes to
season them, then Cut off excess

Transferred Regular Cut but
75 lbs pressure - 9 stuck 3 free release

Transfer 8 OK 4 Discs chip edge
Print 8.

good	3	RO	5
fair	5	Horrible RO	1
bad	2	No RO	3
	10	faint	1
			10

Surfaces
Bad

Run Cuts
Bad

717 Blanks – 3% 6/4 in Tolerance
632 Var

Freescale 9
Sluth 3
8 OK 2 Discards

Prints. OK 7 Poor print 3 Disc 1

good	13	No Ru 8 ✓
fair	6	Bad RO 2 ✓
fair to good	1	
Bad	1	Done & Co RO 2
Loud	1	faint. 6 ✓
		Very faint 2 ✓

Surfaces fair.

Run Outs fair

717 Blanks 3% 6/4
632 Var Lat 15 30
Made 12 Transfers all OK
Reg Schedule - 3 freezeless 9 short

Print Reg sch-but on high
need 1500 lb. will end 1000

OK 6 - only 6 printed

Loud	1	RO	5
fair	7	faint	5
fair to good	1	Reg RO	1
good	3	No RO	1
	12		12

Surfaces
Bad.

Run Outs
Bad

5% 6/4 Rhenal

719 Blanks - Req schedule
632 var
Stock 8
frees 4
OR 8
2nds 4

Grant 6 — 5 OR 1 poor print

good	11	RO	3
fair to good	1	faint	6
fair		very faint	1
	12	Bad RO	1
		no RO	1
			12

Surfaces good

Run Qualy not good

350 Fabr Blanks
polished —
Req transfering schedule
632 V — Lot 1530
free release —

One —

Loud 1 fair to good 1	faint RO some RO

Surface Bad 1 — Run outs fair

716- Blank 1/2 6/4 mit

Req schedule -
12 made 7 black 5 free
7 OK 3 2nds 2 Discards

Prints 12 calc OK -

fine	2	Bad RO	5
Very good	1	RO.	10
good	10	faint	5
fair	8	No RO	4
faint to good	1		24
Loud -	2		
	24		

Surface
Good

Run outs
Bad

Reg Blanks
75 lbs clean
632 Var Lot 1529 213 blank
free 9
Stuck 3 - Reg schedule
Transfers 12 OK
Prints 12 OK —

Very good	3	No RO	13
Good	15	faint	8
fair	2	Very faint	2
fair to good	4	Some RO	1
	24		24

Surface good

Run Out good -

2K3 Blank 632 Var lot 1526
Req schedule Cut 2100, Lbr con
high used
3 slide
9 free
OK 9 Discards 2.

Print 11 — 9 OK
Printed Req schedule

good	7	RO	11
Good	5	faint	5
Moderate	3	Bad RO	3
faint	6	No RO	3
Soft	1		22
	22		

Surface
Not good

Run Outs
Bad

213 Blank
Var 632
12 Transfer

50 lbs Sleaver
Transfering Printing

QR 1
2nd 2
Discards 9

Printing 4 4OR

good	6	NoRO	3
fair to good	2	faint	1
	8	SomeRO	2
		RO	2
			8

Surfaces
Fair

Run out
Not good

Steam

Pressure	Temp
10	220
15	250
20	259
25	267
30	274
35	280
40	286
45	292
50	297
55	302
60	307
65	311
70	316
75	320
80	323
85	327
90	331
95	334
100	337
105	340
110	344
115	347
120	349
125	352

Calliper of the 719 – from ground

265
274 average
267 269.5
272

300
302
298 } 300
300

284.5

280
285
280 } 284
290

Dif calliper of sides
No 1 9/1000
2 10/1000
3 4/1000

15.5% thicker

46.5 thicker

719 – Blank not ground finer

			Greatest dif
230, 237, 230, 237 } 233	213, 217, 211, 211 } 213		7, 20, 13, 6
267, 247, 257, 257 } 257	221, 255, 221, 257 } 239		34, 16
249, 249, 240, 253 } 248	227, 242, 238, 238 } 236		

238

719 Blank 5% 64 ground finer in Back mill – it increases the fibres perhaps double percents flowing + expands under without record on –

3 Blanks Transferred
632 Van Lot 1533 – all free to clean

Transfers OK 2 Cancel 1

Prints all OK fine, no eggshell
blanks thicker than usual no flow
on punching. Reason [illegible] –
Can be made thinner, too
thick now

Surfaces	Run Outs
good –	good –
25% more than Blank and Double Transfer	
good – 6 –	Air RO 2 Very faint 2 faint 2 6

703 Blanks Planed & Creased
632 Var Lot 1526
OK 3 Dio 3 free release 6

Prints 2 OK 2 Dio Crkd

good	0
fair	2
fair to good	1
Loud	3
	6

Horrible RO	2
RO	2
faint	2
	16

Surface
Very Bad

ROut.
Bad.

718 Blanks baked [illegible]

Transfer 75 lbs steam Reg [illegible]

Print 75 lbs steam

632 V 6 Transfer 4 free 2 stuck

OK 4 Discard 2

Print 4 OK

V sug good	1	RO	1
good	3	No RO	4
fair	4	faint	3
	8		8

Surface fair

Run out fair to good

699 A Vermont
Lot 1527 60 00

12 people — 6 shook hand
Discards 2
OK 4

Prints 3 OK 1 poor print

good	1	RO	5
fair	6	Bad RO	1
Load	1	NO RO	1
	8	Horrible RO	1
			8

Surface
Bad -

Run out
Bad -

699 Varnish High Viscosity
16 mm
Lot 1527 45 cc

6 plates, stuck
4 OK 2 Discards

Prints OK –

good	1	RO	7
fair	2	Bad	1
Loud	3		
Moderate	1		
Soft	1		

Surface
Bad

Rough
Bad

699-Var 7 mm
Vlocously

Lot 1528 45cc
6 free

Ok 4 1 Comcl 1 Dis

Prints 4 ok +1

good	0	RO	1
fair	4	No RO	1
mod	1	Bad RO	1
Load	5	Horrible	2
	10	faint RO	~~4~~

Surface
Bad

Run Outs
Bad

632 - Var 1530 Blanks 360 grams
213 blank -

free release 12

7 Contact 2 Low 1 hour high
9 Cool —

Prints. 9 ok 3 poor print

Very good	1	RO	3
good	6	Bad	3
fair	3	No RO	3
Low	2	faint	3
	12		12

Surface -
~~Not~~ good

Random
Bad

Req –
2 min contact
1 hour 1000 lbs –
Cut off clamp read condition
after 15 min – put it on slowly

Good	1	RO 4
fair	2	Bad RO 2
Load	5	faint 2
	8	9

Surface
Bad

Run outs
Bad

Reg
60 lbs ream

632 12 Trims 10 Stuck fire 2
8 Ds seconds chipped Edges
4 OK

Print. 4 — 2 OK.

good	4	RO 2
fair	3	No RO 2
Load	1	faint. 4

Surface
Not good

Run Ocular
fair

Reg —

7 high 1000 lbs
2 600
7 Low,
6 Cool-

free release 2 stuck 1

Transfers 6 OK 10 no 4

good	6	RO	1
fair to good	1	No RO	3
fair	3	fair	4
	10	Bad	3

Surface
fair

Run flat.
Bad

Req

Dont cool shut steam of
20 min then turn on water
12 Transfers - all free

Printed 6 OK —

good	5	RO 5
fair	2	faint 5
Lond	3	
	10	

Surfaces
Not good

Run quite
Bad

Fred Otto 300' rebarked
plates
3 transfer - Stuck

Prints 3 OK

good	1	RO
fair to good	4	noRO 5
fair		faint 1
Lower	1	

Surface
fair

Runoff
fair to good

704 Blank

Raised in Vac Dryer

632 V. Reg —

3 Stuck 3 from

4 OK 2 Discarded Edge Crack

good	0	RO 6
fair	3	No Ro 2
Load	2	8
fair to good	3	
	8	

Surface Bad

Runouts Bad

Req good 213 Flux

OK 3 Dus 1

good	2	RO	1
mod	1	Bad	2
fair to good	1	noRO	1
fair	2	faint	2

Surface - Bad

Runoff Bad

210 blanks 10% 6/4

4 Concave 2 To 1 powder
2 Low
3 High all free release
4 Cobl

Print 2 Concave
1 Low
1 High

fine	3	RO	5
good	6	faint	4
very good	2	no RO	3
fair	1		
	12		

surfaces good

Run outs not good

720 Charcoal

Stick 3 from 3.

all chipped & cracked at Edges

Very good 2
good 10
12

RO 4
V faint 2
No RO 6

Surfaces
good

Rounded
faint to good

Req = Runby Dally 260 Feb
6 hours -
Req schedule

Very good	2	RO	1
good	13	No RO	~~14~~ 18
fair	6	fair	4
Loud	3	Bad RO	2
fair to good	1		

Surfaces fair to good	Runouts - fair to good

[ITEMS(S) FOUND IN BOOK]

Mr Edwards

Hello! Mr [illegible]
called up: says he myself
negated the matter and found
there was a small deposit of C
on the Phosphine II rods and
the sample sent are. He will
forward 3 lbs of the Phosphine
II rods, and we can return
the other.

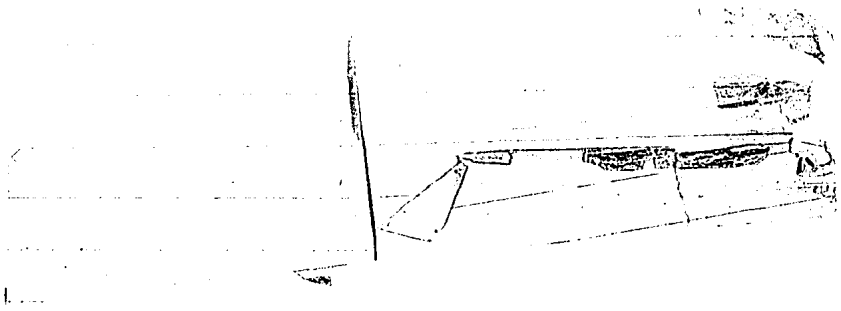
J Ed

[ITEMS(S) FOUND IN BOOK]

wood pulp

10 grams Sample

5.5 grams through 200 mesh

4.5 " " " "

3 hours grinding